Applying deep-sea coral science to fishery management in New England, U.S.A.

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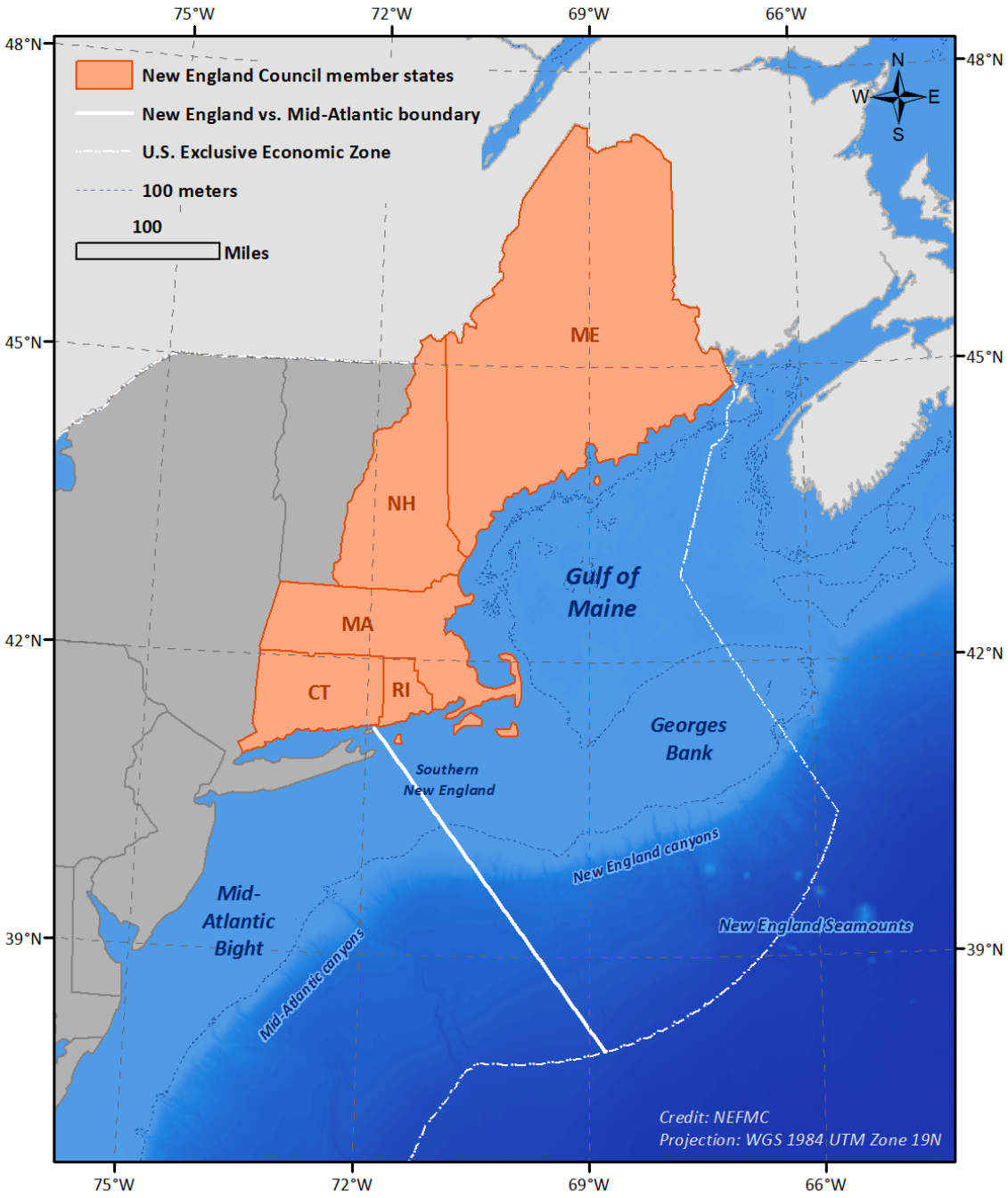
New England Fishery Management Council

Deep-Sea Coral Research and Management Webinar Series

December 15, 2016



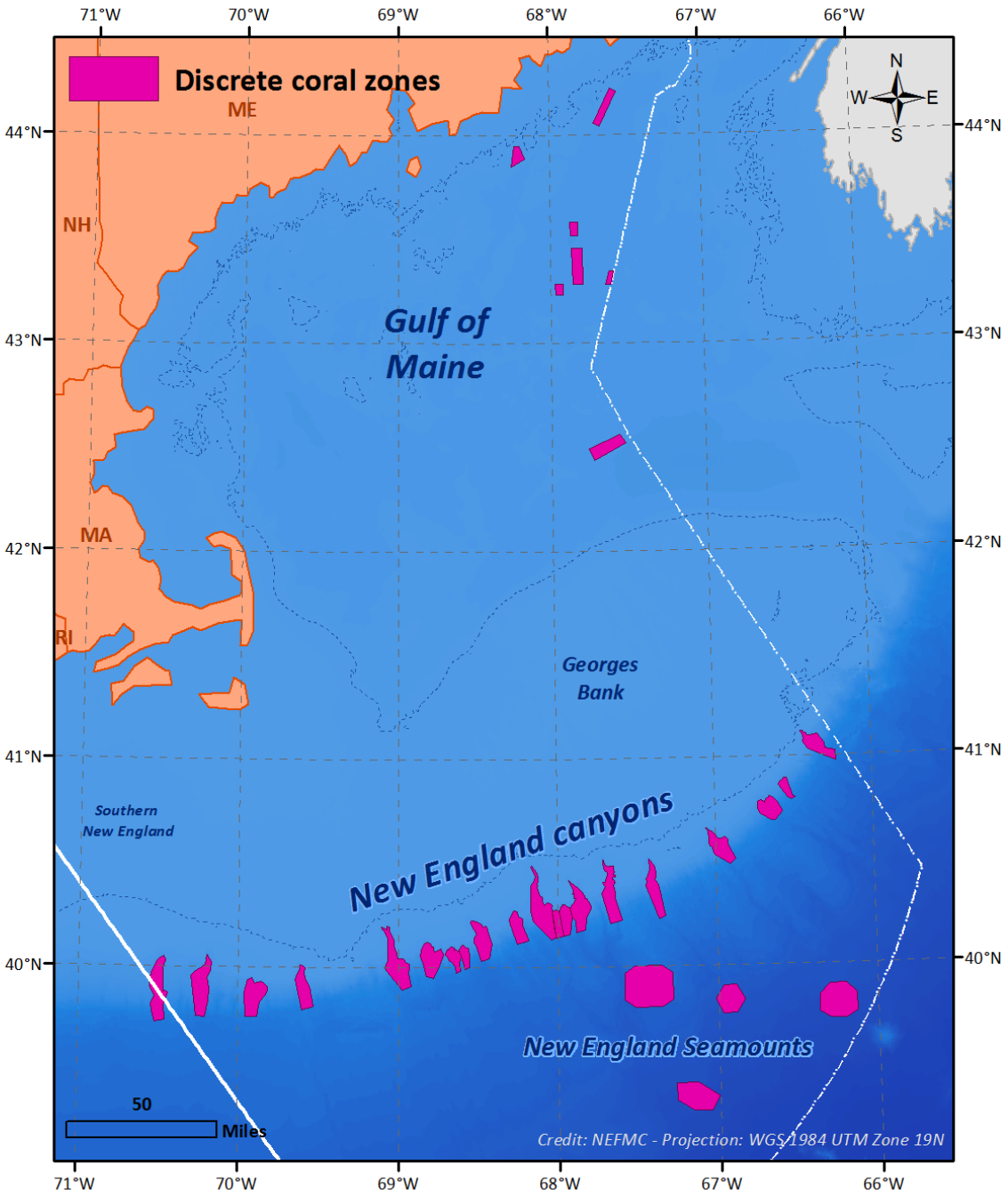
New England Fishery Management Council

Council

Committees (e.g. Habitat)

Plan Development Teams

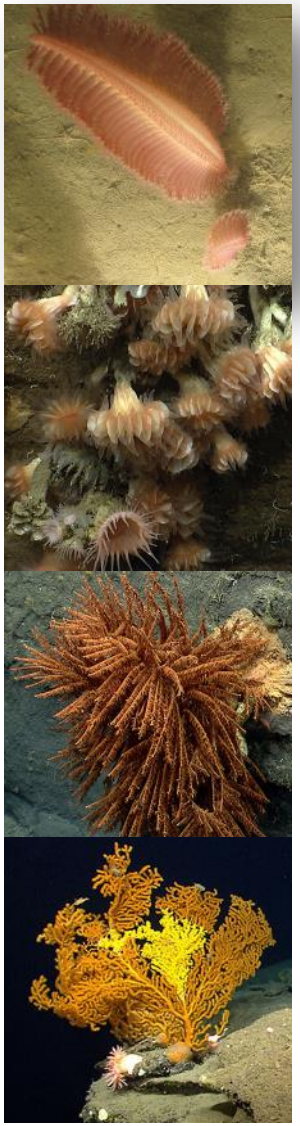
Advisory Panels



Timeline of NEFMC coral management actions

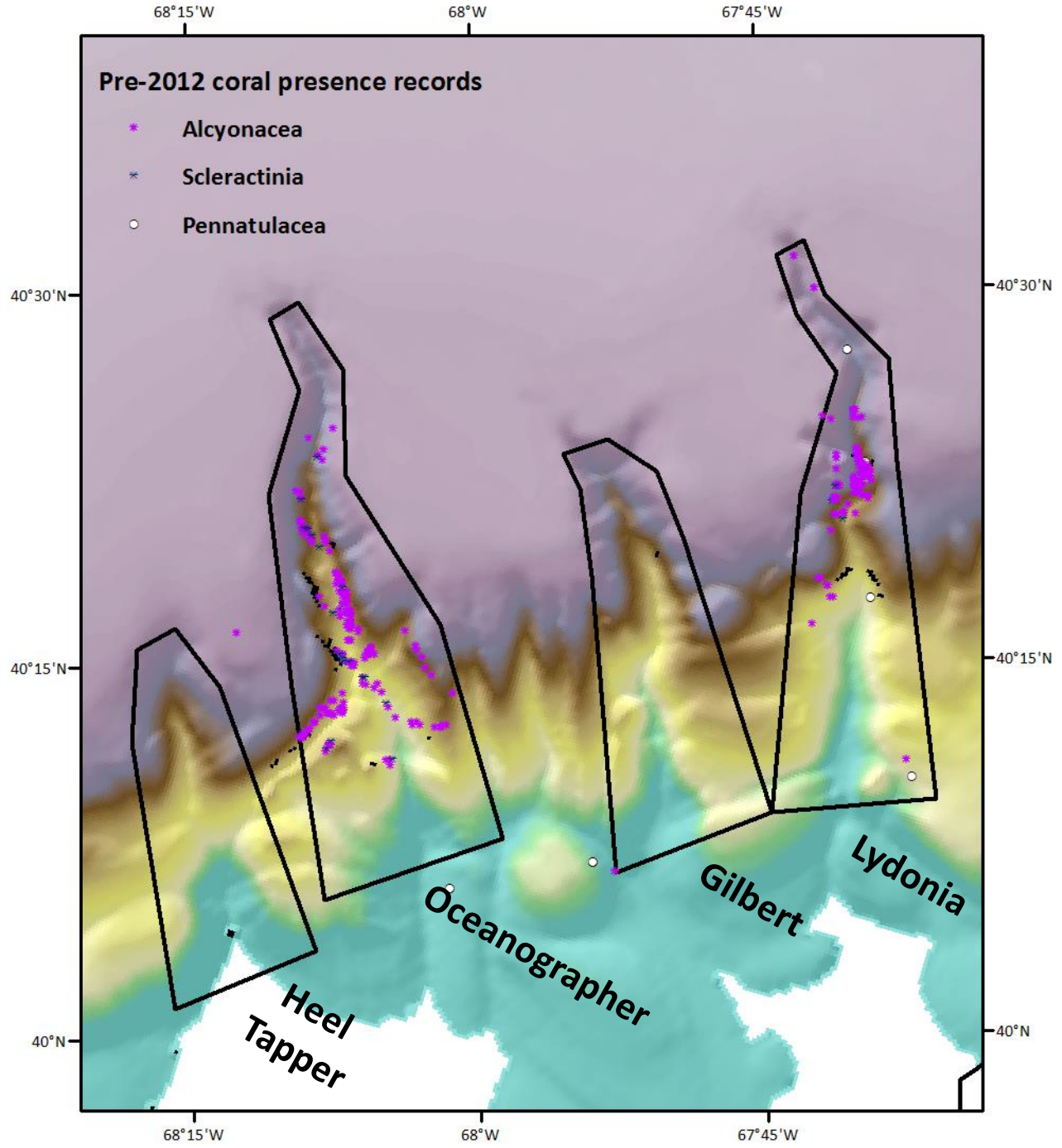
- **2005:** Canyon Closures in Monkfish FMP
- **2007:** Habitat Areas of Particular Concern selected
- **2012:** 1st draft of discretionary coral zones
- **2013:** MOU with MAFMC, removed MA zones from consideration
- **2016:** 2nd draft of discretionary coral zones - new data
- **2017:** Council may adopt some/all of zones shown at left, plus additional broad zones

Amendment problem statement (April 2016)



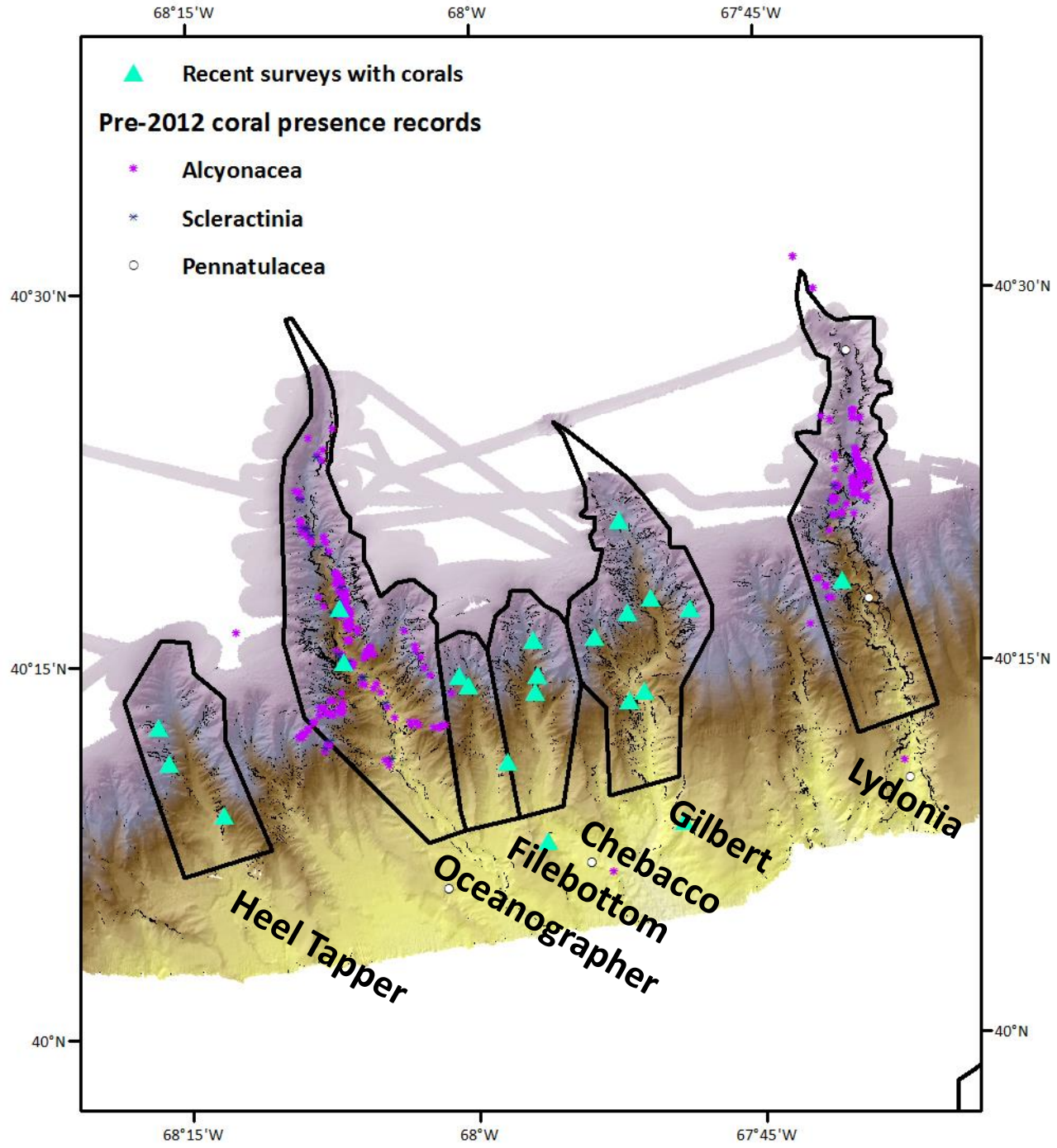
The Council is utilizing its discretionary authority under section 303(b) in the Magnuson Stevens Act to identify and implement measures that reduce, to the extent practicable, impacts of fishing gear on deep-sea corals in New England. This amendment contains alternatives that aim to identify and protect concentrations of corals in select areas and restrict the expansion of fishing effort into areas where corals are likely to be present.

Deep-sea corals are fragile, slow-growing organisms that play an important role in the marine ecosystem and are vulnerable to various types of disturbance of the seafloor. At the same time, the importance and value of commercial fisheries that operate in or near areas of deep-sea coral habitat is recognized by the Council. As such, measures in this amendment will be considered in light of their benefit to corals as well as their costs to commercial fisheries.



Early draft coral zones and data

- Historical records of coral presence
- Bathymetry shown is from The Nature Conservancy, based largely on the NOAA Coastal Relief Model (3 arc second ≈ 90m resolution)
- Black shading = areas with slope ≥ 30°
- Black outlines are coral zones

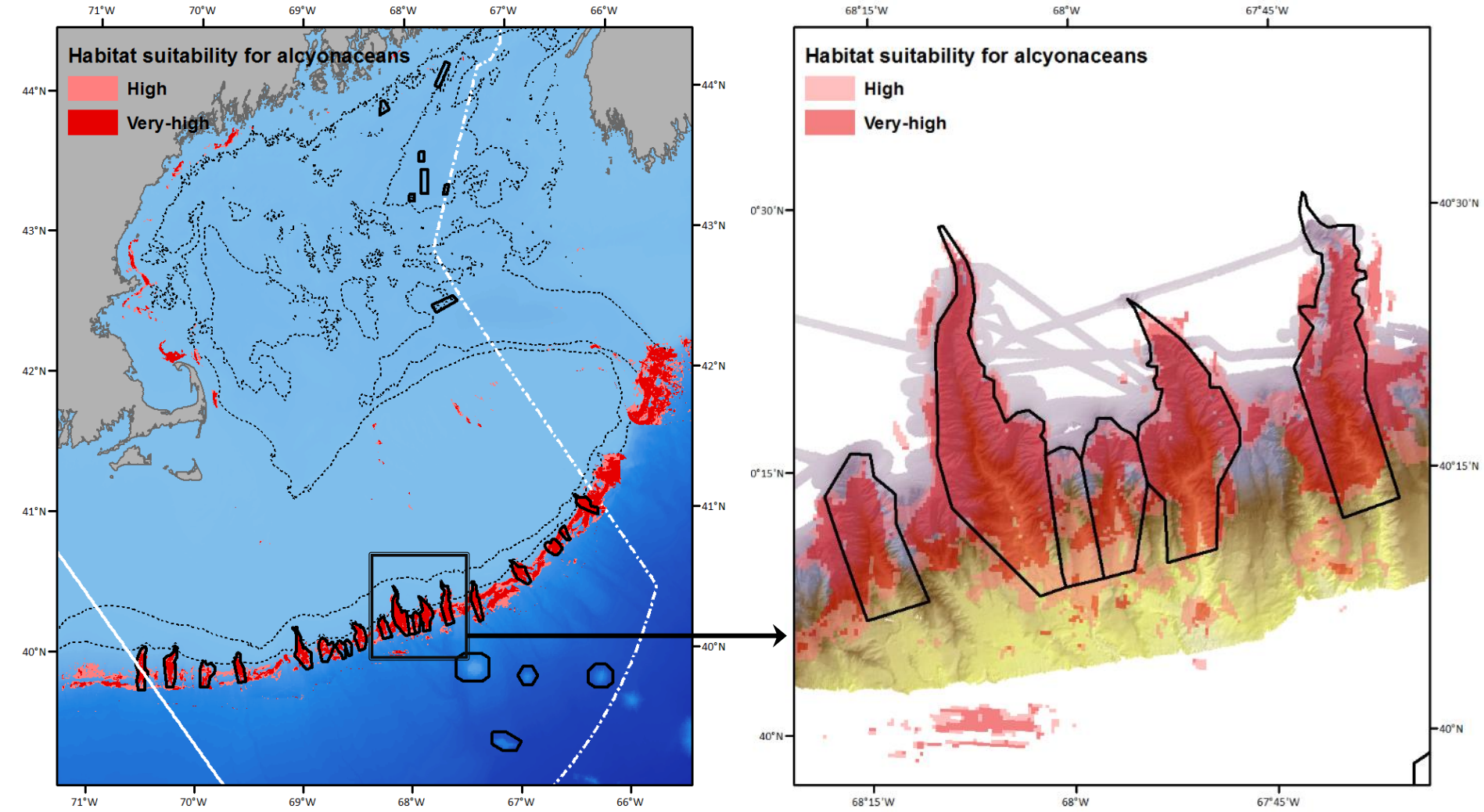


Updated coral zones and data

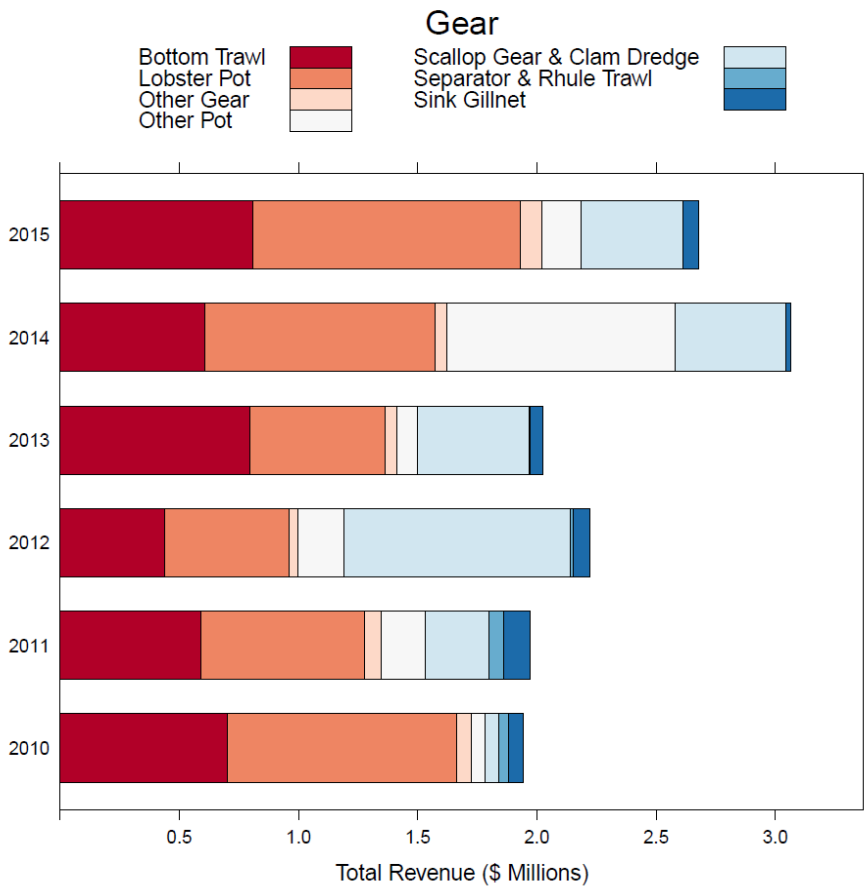
- Historical records shown
- Triangles are recent ROV or towed camera surveys with corals present
- Bathymetry is from ACUMEN project (25m resolution)
- High slopes in black
- Updated zone boundaries in black

Habitat suitability model

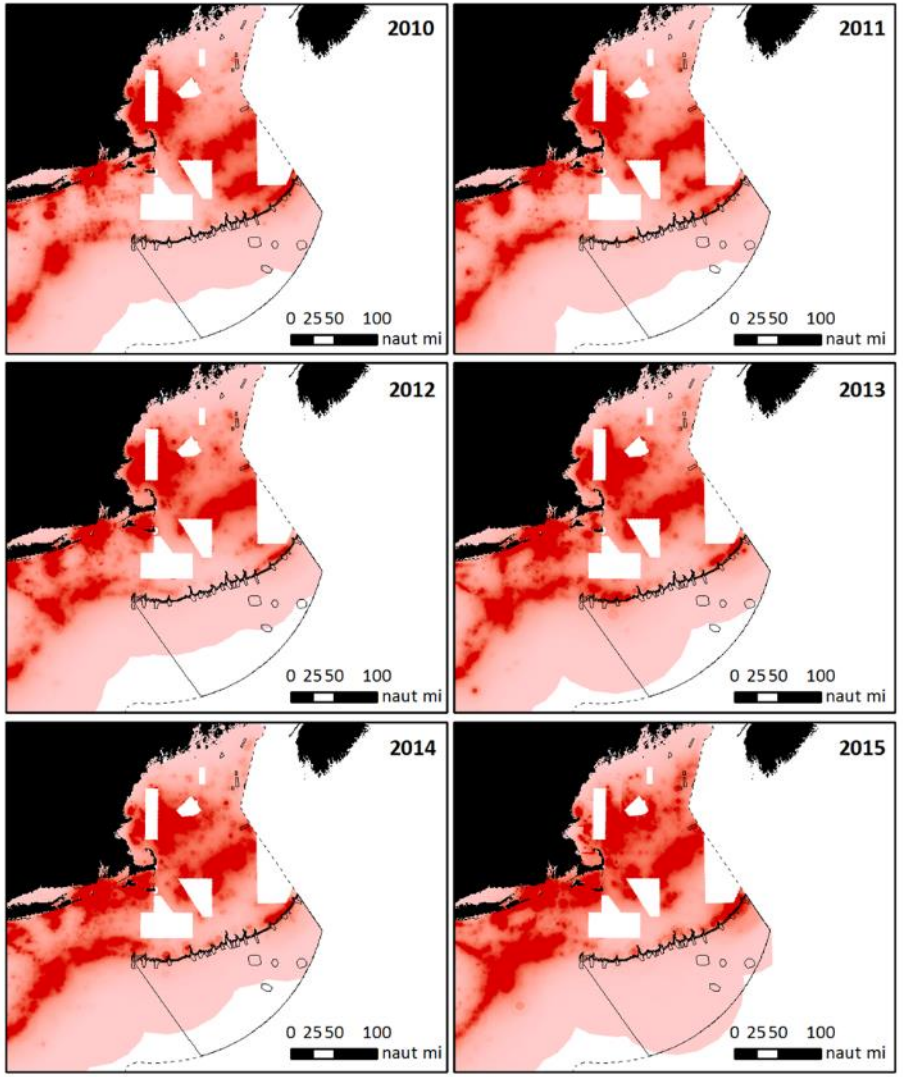
- Developed by NOS/NCCOS in collaboration with NEFSC
- Uses historical records and coastal relief model, somewhat coarse resolution
- Good complement to high resolution bathymetry and recent coral survey data



Estimated revenue by gear type in canyon and seamount zones



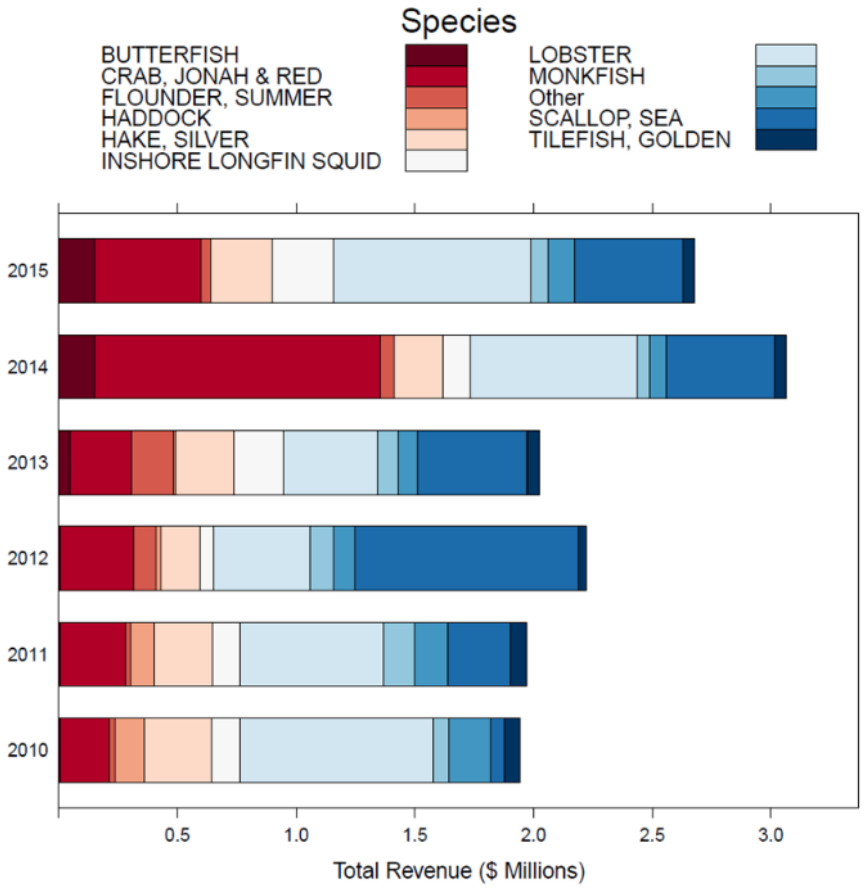
Bottom trawl



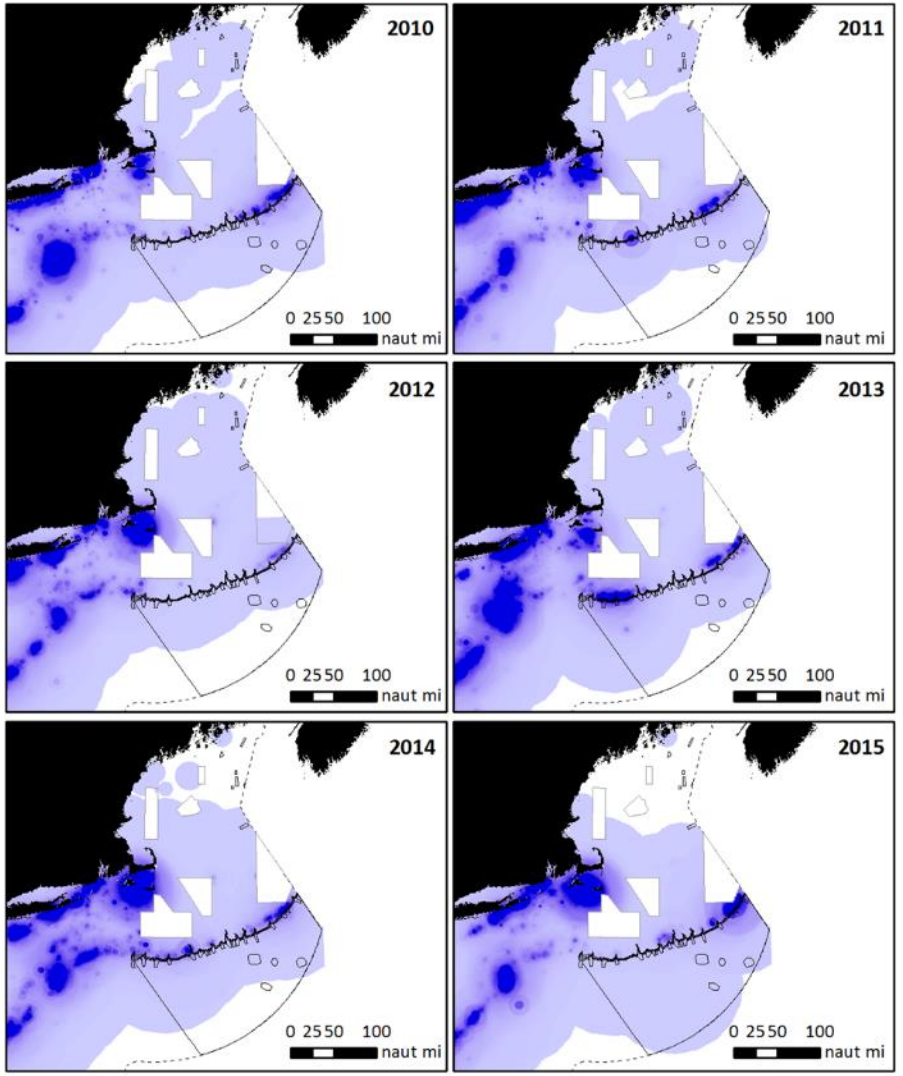
Gear: Bottom trawl

Map created October 26, 2016

Estimated revenue by species in canyon and seamount zones



Longfin squid



Species: Longfin squid

Map created October 28, 2016

Powell Canyon. Credit: NOAA Okeanos Explorer Program.

Hydrographer Canyon. Credit: NOAA Okeanos Explorer Program.

Summary

- Councils are required to use best available science
- Interest in coral diversity/distribution data at order/family levels
- Imagery/video compelling
- Want to understand relationship to managed stocks/fisheries
- Trying to balance tradeoffs between coral conservation and fisheries operations
- Heavily reliant on spatial data to draw boundaries